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=> d his

     (FILE 'HOME' ENTERED AT 09:19:18 ON 20 FEB 2002)
     FILE 'CA' ENTERED AT 09:19:27 ON 20 FEB 2002
L1     6174 S DERIVATIV?(2A)(SPECTRO? OR PHOTOMET? OR PHOTOSPECTRO?)
L2      590 S L1(1A)(FIRST OR 1ST)
L3        9 S L2 AND(HEMOGLOBIN OR HAEMOGLOBIN OR HEAMOGLOBIN OR HB)
L4     4682 S BLOOD(2A)(SUBSTITU? OR REPLAC?)
L5        0 S L2 AND L4
L6        0 S L1 AND L4
L7       13 S L4(3A)(INTERFER? OR ERROR OR OVERLAP?)
L8       84 S L1 AND(HEMOGLOBIN OR HAEMOGLOBIN OR HEAMOGLOBIN OR HB)NOT L2
L9        8 S L1 AND HEMOLY?
L10    1012 S L1(1A)(SECOND OR THIRD OR 3RD OR 2ND)
L11      58 S L8 NOT L10
L12      83 S L3,L7,L9,L11
L13      63 S L12 NOT PY>1997
L14      20 S L12 NOT L13
L15      12 S L14 AND(CO OX? OR PATENT/DT)
L16      75 S L13,L15
     FILE 'MEDLINE' ENTERED AT 09:36:45 ON 20 FEB 2002
L17      19 S L13
     FILE 'BIOSIS' ENTERED AT 09:37:03 ON 20 FEB 2002
L18      18 S L13
     FILE 'CA, MEDLINE, BIOSIS' ENTERED AT 09:37:45 ON 20 FEB 2002
L19      83 DUP REM L16 L17 L18 (29 DUPLICATES REMOVED)
     FILE 'CA' ENTERED AT 09:39:28 ON 20 FEB 2002
           E SAMSOONDAR J/AU
L20      13 S E3-4
L21       7 S L20 AND(ALGORITHM OR HEMOLYSIS OR PRE TEST)

=> d bib,ab l19 1-83

L19  ANSWER 14 OF 83  CA  COPYRIGHT 2002 ACS
AN   126:4203  CA
TI   Spectroscopic method for analysis of inhomogeneous samples
IN   Degen, Beat R.; Garyantes, Michael F.
PA   Degen, Beat R., USA; Garyantes, Michael F.; Ciba Corning Diagnostics
     Corporation
SO   PCT Int. Appl., 54 pp.
PI   WO 9633400        A1   19961024       WO 1996-IB359    19960419
     US 5841523        A    19981124       US 1995-425559   19950420
PRAI US 1995-425559    A1   19950420
AB   A method is provided for more accurately calcg. the concn. of analytes or
     components in test samples.  The method includes the use of an algorithm
     for anal. and selection of sets of signal measurements from a
     spectrophotometer.  Sets of signal measurements are selected to avoid
     inhomogeneities, i.e. air bubbles, artifacts and diln., in test samples
     being analyzed.  The method has application to the spectroscopic detn. of
     the concn. of Hb derivs. or fraction in a blood sample.

L19  ANSWER 16 OF 83  CA  COPYRIGHT 2002 ACS
AN   125:242135  CA
TI   Simultaneous measurement of total hemoglobin and its derivatives in blood
     using CO-oximeters: Analytical principles; Their application in selecting
     analytical wavelengths and reference methods; A comparison of the results
     of the choices made
AU   Brunelle, Jacques A.; Degtiarov, Arkady M.; Moran, Robert F.; Race, Leonard
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A.
CS Ciba Corning Diagnostics Corp, Medfield, MA, 02052, USA
SO Scand. J. Clin. Lab. Invest., Suppl. (1996), 56(224, 15th International Symposium on Blood Gases and Electrolytes), 47-69
AB Optical methods of quantifying total Hb (tHb), applying the principles of the Lambert-Beer law, have been used both on untreated whole blood and on blood mixed with chems. to form a stable chromophore, since the earliest days of lab. medicine. The same principles may be applied for quantitation of the individual Hb derivs., such as oxyHb (O2Hb) and deoxyHb (HHb)1, as well as the non-oxygen transporting "dysHbs", including carboxyHb (COHb) and metHb (MetHb). The total Hb measurement is typically carried out using a light source with a broad band of visible wavelengths. However, measurement of the derivs. requires using discrete, narrow bands of light in order to differentiate between the small differences of light absorbed by the individual derivs. Either general-purpose, narrow band-pass spectrophotometers, or special-purpose photometers utilizing a set of fixed wavelengths, commonly referred to as "CO-oximeters" are suitable. Rapid, direct, photometric quantification of the derivs., necessary in the clin. environment, relies on the specific light absorption characteristics of each Hb deriv. at the wavelengths selected, which in turn requires independent and exact knowledge of the concns. of each entity in ref. materials. This report examines the process involved in the selection of wavelengths and ref. methods, contrasts the effects of the choices made and discusses some implications and limitations for routine measurement.

L19 ANSWER 28 OF 83 CA COPYRIGHT 2002 ACS
AN 112:32826 CA
TI Hemoglobin determination in plasma or serum by first-derivative recording spectrophotometry. Evaluation of the procedure of Soloni, Cunningham, and Amazon
AU Copeland, Bradley E.; Dyer, Pamela J.; Pesce, Amadeo J.
CS Coll. Med., Univ. Cincinnati, Cincinnati, OH, USA
SO Am. J. Clin. Pathol. (1989), 92(5), 619-24
AB The authors tested the plasma Hb measurement procedure of F. G. Soloni et al. (1986) which used recording deriv. spectrophotometry. By this technique, the authors measured plasma or serum Hb down to a level of 10 mg/L. The method was quant. and not affected by bilirubin or lipemia. MetHb did not interfere with the assay. The obsd. first-deriv. max. and min. were reproducible but instrument-dependent. The authors applied this technique to the measurement of serum Hb in 100 healthy human subjects. They obsd. a geometric mean value of 68 mg/L with the actual range 21-189 mg/L. This technique is a simple, rapid, and reproducible method for detg. plasma or serum Hb.

L19 ANSWER 29 OF 83 CA COPYRIGHT 2002 ACS
AN 111:228322 CA
TI Hemoglobin by first derivative spectrophotometry: extent of hemolysis in plasma and serum collected in vacuum container devices
AU Copeland, Bradley E.; Dyer, Pamela J.; Pesce, Amadeo J.
CS Veterans Adm. Med. Cent., Cincinnati, OH, 45220, USA
SO Ann. Clin. Lab. Sci. (1989), 19(5), 383-8
AB Commonly obtained clear plasma or serum samples contain small amts. of Hb derived from either naturally occurring processes or from collection trauma. Using the recently evaluated, highly specific, sensitive, quant. procedure of first deriv. spectroscopy, the Hb concn. in 9 types of vacuum collection containers was measured, including 3 types of anticoagulant, 3 tube sizes, and tubes with or without serum separators. Using this procedure, ref. values were established for plasma and serum Hb. These

values are the result of the combined effect of red cell trauma during the collection, interaction with the anticoagulant or the serum separator material, and physiol. changes. The obsd. Hb levels were best described by a log normal distribution pattern. The 3 plasma collection samples showed lower av. values than the serum samples. The citrate anticoagulant gave the lowest plasma Hb av. value. Thus, the av. Hb concn. owing to the collection procedure <100 mg/L. A serum or plasma Hb concn. >200 mg/L is probably due to abnormal physiol. causes and not collection artifact. Serum or plasma Hb measurements evaluated by these criteria can be relied upon as an accurate approxn. of excess Hb produced by a pathol. hemolytic process such as acute autoimmune hemolytic anemia, major blood group incompatibility or paroxysmal hemoglobinuria.

L19 ANSWER 31 OF 83 CA COPYRIGHT 2002 ACS
AN 111:3593 CA
TI Reference interval for the bilirubin excess in cerebrospinal fluid by derivative spectrophotometry
AU Gimpel, J. A.; Van Rijn, H. J. M.; Putters, J.
CS State Univ. Hosp. Utrecht, Acad. Hosp., Utrecht, 3511 GV, Neth.
SO J. Clin. Chem. Clin. Biochem. (1989), 27(4), 217-19
AB The value of the bilirubin excess can be a useful aid for recognizing blood from hemorrhage in cerebrospinal fluid. One of the parameters needed for the calcn. of the bilirubin excess is the total bilirubin concn. in cerebrospinal fluid. A method for measuring total bilirubin in cerebrospinal fluid is presented, based on diazotization of bilirubin according to Jendrassik-Grof, combined with multiwavelength first-deriv. spectrophotometry. This bilirubin assay allows detn. of total bilirubin concns. as low as 0.045 μmol/L. This method also enables a correlation for oxyHb interference. The value of the bilirubin excess was calcd. for patients not showing any neurol. disorder. A ref. interval of 0.07 ± 0.06 μmol/L was calcd. for the bilirubin excess.

L19 ANSWER 47 OF 83 CA COPYRIGHT 2002 ACS
AN 104:203357 CA
TI Evaluation of absorption and first- and second-derivative spectra for simultaneous quantification of bilirubin and hemoglobin
AU Merrick, Mark F.; Pardue, Harry L.
CS Dep. Chem., Purdue Univ., West Lafayette, IN, 47906, USA
SO Clin. Chem. (Winston-Salem, N. C.) (1986), 32(4), 598-602
AB The relative merits of absorption and 1st- and 2nd-deriv. spectra for the simultaneous quantification of bilirubin and Hb are discussed, and single-, 2-, and multiwavelength methods are evaluated. Although both species are quantified from single- or 2-wavelength absorption data, lipids or other absorbing or light-scattering components introduce systematic errors that can be substantially decreased by using 1st or 2nd-deriv. spectra. Multiwavelength data processing methods with deriv. spectra permit quantification of components with overlapping spectra and decrease the random error usually assocd. with deriv. methods. A typical least-squares equation for quantifying bilirubin in the presence of Hb and bovine serum albumin from multiwavelength 2nd-deriv. data is y(computed) = 0.999x(prepd.) + 0.00 mg/L.

L19 ANSWER 48 OF 83 CA COPYRIGHT 2002 ACS
AN 104:144936 CA
TI Plasma hemoglobin determination by recording derivative spectrophotometry
AU Soloni, Felix G.; Cunningham, Marcia T.; Amazon, Kip
CS Dep. Pathol. Lab. Med., Mount Sinai Med. Cent., Miami Beach, FL, 33140, USA
SO Am. J. Clin. Pathol. (1986), 85(3), 342-7

AB A simple, rapid, and reproducible method is described for detg. plasma Hb concn., even in the presence of bilirubin, myoglobin, or marked turbidity. No toxic reagents are used and, since the anal. is purely physicomathematic, the sample is not altered and can be used for addnl. tests.

L19 ANSWER 66 OF 83 CA COPYRIGHT 2002 ACS
AN 94:204817 CA
TI Separation of bilirubin from hemoglobin by recording derivative spectrophotometry
AU Amazon, Kip; Soloni, Felix; Rywlin, Arkadi M.
CS Dep. Pathol. Lab. Med., Mount Sinai Med. Cent., Miami Beach, FL, 33140, USA
SO Am. J. Clin. Pathol. (1981), 75(4), 519-23
AB Recording deriv. spectrophotometry is a technic for resolving overlapping absorbance curves by enhancing small changes in those curves. The deriv. (slope) is a function sensitive to rapid changes in the curve and will amplify those regions while damping out slowly changing portions of curves. The method presented relies on a math. anal. of the composite absorption curve formed by bilirubin and Hb. Data confirming the usefulness of this technic for reliably and quant. sepg. these 2 substances in aq. soln. are presented. Recording deriv. spectrophotometry may be useful for analyzing amniotic fluid, urine, or other biol. fluids.

=> d l21 bib,ab 1-7

L21 ANSWER 5 OF 7 CA COPYRIGHT 2002 ACS
AN 129:227791 CA
TI Method and apparatus for screening plasma for interferents in plasma from donor blood bags
IN Samsoondar, James; Given, Douglas George
PA Cme Telemetrix Inc., Can.
SO PCT Int. Appl., 49 pp.
PI WO 9838961 A1 19980911 WO 1998-CA170 19980303
US 6268910 B1 20010731 US 1999-367863 19990903
PRAI US 1997-38555 P 19970303
AB An app. and a method are described whereby plasma integrity of blood plasma contained in a blood bag is rapidly and accurately assessed without compromising the sterility of the plasma, or destroying any of its components. This is achieved through spectral data which is used in a novel way so as to det. if a plasma specimen representative of plasma in a blood bag contains interferents and if so, to what extent. The app. and method analyze plasma contained in two bags whereby tubing connects the two bags. A lamp is used to irradiate the specimen, and a spectrophotometer is used to measure radiation from the specimen. The app. and method allow for detn. where both the bags and tubings are translucent and contain writing on their surfaces (e.g., proprietary information), and the light is transmitted through the writings, plastic, and the plasma contained in the bag or tubing. Principle analytes include Hb (as an assessment of hemolysis), bilirubin (as an assessment of bilirubinemia), biliverdin (as an assessment of biliverdinemia), equiv. intralipid concn. (as an assessment of turbidity) and methylene blue concn. (as part of the viral inactivation quality assurance system).

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